

REMARKS

I. Status of the Claims:

Claims 1-3, 5-17, 19-27 and 86 were pending in the application prior to this response. By this Amendment, claims 1 and 15 have been amended. No new matter has been introduced as a result of the Amendment.

II. Response to Claim Rejections Under 35 U.S.C. § 103:

Claims 1, 3, 5, 8, 15, 17, 19, 21 and 86 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Orito, in view of Arimoto and Sugiura, all of record.

Claims 4, 7, 9-14, 18, 20 and 22-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Orito in view of Arimoto, Sugiura and Kamisawa, all of record.

Claims 2, 6 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Orito in view of Arimoto, Sugiura and Ohta, all of record.

Applicants have further amended independent claims 1 and 15 to recite that the image sensing characteristic indicates spatial positional deviations of a plurality of colors of pixel signals (e.g., R, G and B signals), obtained by the plurality of image sensing element arrays (e.g., R, G and B line sensors) of said image sensor, with respect to one (e.g., B signal) of the pixel signals obtained by one (e.g., B line sensor) of said plurality of photoelectric conversion element arrays (see, for example, FIG. 27A and 27B).

With this amendment, Applicants have clarified that the image sensor includes multiple (R, G and B) line sensors, and there is a characteristic in which the spatial positions of pixel signals respectively outputted from the multiple line sensors deviate due to, for example, alignment of the multiple line sensors and/or optical reasons as shown in Fig. 26. The deviations of the pixel signals (e.g., R and B signals obtained from R and B line sensors) may be obtained with reference to the spatial position of one of the pixel signals (e.g., B signal obtained from B line sensor). By correcting the pixel signals using such image sensing characteristic indicating spatial positional deviations, it is possible to obtain an original image without color deviations even when the pixel signals obtained by the image sensing unit spatially deviate.

With respect to the references made of record, the Examiner notes on page 9, lines 18-21 of the Final Office Action dated September 27, 2006, that the combination of Orito, Arimoto and Sugiura does not disclose that the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

The Examiner then relies on Kamisuwa to cure the deficiency of the previously identified references. Kamisuwa discloses reading a zigzag shaped adjustment mark 212 by a CCD line sensor 23, detecting positions of intersections between the scanning line of the CCD line sensor 23 and line segments 212a, 212b, ..., of the mark 212 on the basis of output levels from the CCD line sensor 23, then detecting positional errors of the CCD line sensor both in the main scanning direction and the sub-scanning direction, and inclination of the CCD line sensor 23, and so on as shown in Fig. 5. According to Kamisuwa, the positional errors of the CCD line sensor is obtained with respect to an ideal position. There may be some indication of a color scanner (i.e., three line sensors together) in Kamisuwa, however, "in this case, an error due to an inclination of a color CCD line sensor 23 in the θ x direction (direction of rotation about the X-axis) can be detected" (column 9, lines 21-24). Thus, merely a positional error of the CCD line sensor (i.e., three line sensors as a whole) can be obtained, and the deviation is not obtained for each of the three line sensors, which is clearly distinguishable from the present invention, as claimed. Thus, Kamisuwa neither recites or implies that the image sensing characteristic indicates spatial positional deviations of a plurality of colors of pixel signals, obtained by the plurality of photoelectric conversion element arrays of the image sensor, with respect to one of said pixel signals obtained by one of said plurality of photoelectric conversion element arrays.

Therefore, even if the positional error determination of Kamisuwa were applied to the Orito, Arimoto and Sugiura references, taken alone or in combination, it is not possible to correct the spatial positional deviations of the pixels signals as in the claimed invention, as amended, since Kamisuwa merely provides an inclination of a color CCD line sensor. Accordingly, Applicant believes that Orito, Arimoto, Sugiura, and Kamisuwa do not teach, suggest, or otherwise render obvious the invention as recited in independent claims 1 and 15, as amended. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection be withdrawn.

CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejection of claims and allowance of this application.

AUTHORIZATION

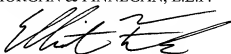
The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 1232-4677. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No 13-4500, Order No. 1232-4677. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,
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Dated: February 27, 2007

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